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ABSTRACT

One attributional model of achievement proposes that individuals attribute their own and others' performance outcomes to one or more of four causes, i.e., ability, effort, task difficulty, and luck, and that such attributions have motivational significance for subsequent achievement-related behavior. The effects of gender, level of resultant achievement motivation (RAM), and overt attributions on inertial motivation were examined by presenting male and female college students with an initial task on which they either succeeded or failed and did or did not make overt attributions. Differences in performance on a related but different task were used as an index of differential inertial motivation effects. Results indicated that females outperformed males on both performance quantity and quality and appeared to be more highly motivated. Both sexes attributed performance outcomes to the same causes in the same proportions. (Author/HLM)

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THE EFFECTS OF GENDER AND ATTRIBUTIONS ON ACHIEVEMENT MOTIVATION AND SUBSEQUENT PERFORMANCE

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EPA, 1980

(1) Title. The effects of gender and attributions on achievement motivation and subsequent performance.

(2) Topical Session Preference. Social/Attribution, Personality/Sex Differences.

(3) Problem. Achievement motivation has been a topic of interest to psychologists for some time. Considerable research in this area has focussed on Weiner's (1972) attributional model of achievement motivation. The central proposition underlying this model is that individuals attribute their own and others' performance outcomes in achievement situations to one or more of four causes - ability, effort, task difficulty, and luck - and that such attributions have motivational significance for subsequent achievement related behavior.

Weiner (1972) defines the level of resultant achievement motivation (RAM) of an individual in terms of the relative strengths of the motives to approach success (Ms) and the motive to avoid failure (Maf). In these terms, in a high RAM individual, Ms is greater than Maf, and in a low RAM individual, Maf is greater than Ms. This model conceptualizes a high RAM individual as one who takes personal responsibility for success and for failure in achievement situations, i.e. attributes success or failure to internal factors such as ability or effort. Conversely, a low RAM individual takes personal responsibility for failure, i.e., attributes failure to internal factors such as low ability, but denies responsibility for success,

i.e. attributes success to external factors such as luck or task ease.

Recent research has begun to focus on the persistence of motivation from one achievement oriented task to another, referred to as inertial motivation (Latta & Patten, 1978). Weiner contends that prior success enhances achievement motivation in low RAM individuals but decreases achievement motivation in high RAM individuals. Conversely, failure on a previous task enhances motivation in high RAM individuals and decreases motivation in low RAM individuals. These divergent carry-over effects are reportedly due to the different attributions made by low and high RAM individuals (Weiner, 1972, p. 240).

Previous research in the area has employed male participants almost exclusively. There is recent evidence that, for males, making overt causal attributions regarding performance outcomes may function as ego-involving instructions and thus affect performance independently of RAM (Patten & White, 1977). The few studies that have included females have reported divergent attributions for males and females. The finding that has emerged most strongly is that success by males is attributed, both by self and others, more to ability than success by females, while female success is attributed more to luck, effort, and/or task ease (Deaux & Farris, 1977).

In general, the findings for failure have been the reverse: failure on the part of males is attributed more to luck,

effort, or task difficulty, while female failure is attributed to ability.

The purpose of this experiment is to examine the generality of Weiner's inertial motivation hypothesis, looking at the effects of gender, level of RAM, and overt attributions on inertial motivation. Since reported female attributions have been similar to those of low RAM males, it is expected that inertial motivation effects will be similar for these two groups. To test the inertial motivation hypothesis, male and female participants were presented with a first task on which they either succeeded or failed and did or did not make overt attributions. Differences in performance on a related but different task were used as an index of differential inertial motivation effects.

(4) Subjects and Design. High and low RAM males and females were introductory psychology students preselected on the basis of their scores on a short form of the Mehrabian RAM scale developed by Latta (1978). Participants were randomly assigned to 16 groups of 8 each. The basic design was a 2^4 factorial: gender, level of RAM (high or low), success or failure on the first task, and attributions (overt attributions or no attributions on the first task). The dependent variables for demonstrating inertial motivation effects were performance quantity and quality on the second task.

(5) Procedure. Students who scored higher on the Hope of Success factor than on the Fear of Failure factor on the RAM scale were categorized as high RAM, and those who scored higher on

the Fear of Failure factor than on the Hope of Success factor were categorized as low RAM. Success or failure on the first task, solving anagrams, was manipulated through anagram difficulty. Each participant was asked to solve six separate anagrams of six letters each. The Success conditions included three very easy and three medium difficulty anagrams. The Failure conditions included the same three medium difficulty anagrams and three unsolvable anagrams. Thirty seconds were allotted for completing each anagram.

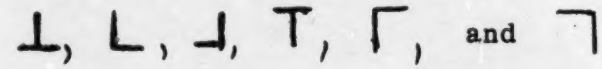
People in the attribution conditions were asked to fill out an attribution scale following each anagram. These scales consisted of ten paired-comparisons, scaled from 1 to 99 and anchored at each end, with uncertain anchored at the midpoint. Participants were asked to indicate to what extent they attributed their success/failure to ability, effort, task difficulty, or luck. For example, if the paired-comparison involved effort and ability, the person was asked to place a check-mark on the following scale:

Effort Uncertain Ability

: : : : : : : : : :

1 10 20 30 40 50 60 70 80 99

The second task was a digit-symbol substitution task consisting of six digits and six symbols. This task involved substituting the highly similar symbols



for the digits 1 through 6. No memory was involved, since there was an example of the proper matches at the top of each

page. Thirty seconds were allotted for completing each page, which was less than the minimum time needed, thus eliminating any ceiling effect on performance. Number of completed and number of correct substitutions on this task were used as the dependent measures for performance quantity and quality, respectively. Performance quantity assessed total behavioral output to show purely motivational effects, while performance quality assessed behavioral accuracy to show any overmotivation effects.

(6) Results.

Performance. A multivariate analysis of variance using performance quantity and quality as the two dependent measures revealed a significant Gender main effect, $F(2.111)=6.590$, $p.<.002$. Females outperformed males on both performance quantity and performance quality.

A multivariate Gender X Attribution interaction, $F(2.111)=5.400$, $p.<.006$, was also significant. At the univariate level, quality alone reached significance, $F(1,112)=5.711$, $p.<.019$. Table 1 presents the means and standard deviations for performance and attribution measures. As can be seen in Table 1, performance quality was essentially the same for males and females under attribution conditions, but females outperformed males under NO-Attribution conditions. The act of making attributions seemed to depress females' performance quality to a level similar to males' performance quality.

A significant 4-way interaction of Gender X Prior Success/Failure X Attribution X Level of RAM was also significant,

$F(2,111)=3.889$, $p.<.023$. Again, performance quality alone was significant at the univariate level, $F(1,112)=6.605$, $p.<.011$. In order to assess the inertial motivation hypothesis, it was necessary to examine the 4-way interaction. Paired comparisons among cell means were made using Fisher's Least Significant Differences test (LSD). The critical value for these tests was t=22, $p.<.05$. Figure 1 shows the simple interactions of Gender X Attribution at different levels of RAM and Prior Success/Failure.

As can be seen in Figure 1, low RAM males who made attributions and experienced prior success outperformed all other low RAM males. This finding supports the inertial motivation hypothesis but is qualified by attributions, i.e., only males who made overt causal attributions following the first task performed at the higher level predicted by the hypothesis.

The results for females seem to have been generally opposite those for males. LSD indicate that high RAM females experiencing prior failure and who made attributions performed at a significantly lower level of quality than females in the same conditions who did not make attributions. This suggests that making attributions may have been overmotivating for high RAM females experiencing prior failure.

Attributions.

Table 1 shows that males and females essentially attributed their performances on the first task, solving anagrams, identically. Both groups attributed performance outcomes to task difficulty, ability, luck and effort respectively. None

of these attributions were significantly different between males and females, although differential attributions to luck approached significance, $F(1,56)=3.24$, $p.<.07$, with females attributing more to this factor. Table 2 presents the pooled within cell correlations for the attribution and performance measures. None of the attribution measures were significantly correlated with the performance measures.

Although differential attributions did not seem to mediate performance, a few isolated attribution differences did surface. There were main effects of both Success/Failure and RAM attributions of ability. Both males and females who experienced success made higher attributions to ability than those who experienced failure. Low RAM participants more than high RAM participants perceived ability to be involved in performance. There was a main effect of Success/Failure on attributions to luck, $F(1,56)=4.375$, $p.<.05$, with people in the Failure conditions viewing performance as due more to bad luck than people in the Success conditions viewing performance as due to good luck. Finally, there was a significant Gender X Success/Failure interaction regarding attributions to effort, $F(1,56)=4.148$, $p.<.05$. Both males and females who experienced success made similar attributions to effort, but males who experienced failure claimed effort to be more of a cause than females did.

(7) Implications and Conclusions.

Contrary to other gender-attribution research, this study did not find differences in causal attributions between males

females. Both sexes attributed performance outcomes to the same causes in the same proportions. A few isolated significant differences in attributions did occur which are consistent with other research, such as people who experience success attribute the cause more to ability than people who experience failure (Deaux & Farris, 1977).

Very limited support for Weiner's inertial motivation hypothesis is provided by this study. It was necessary to examine a 4-way interaction to assess the hypothesis. Only one prediction of the hypothesis was supported - low RAM males experiencing prior success outperformed other low RAM males, but only when they were asked to make causal attributions regarding their performance on the first task. The act of making attributions thus may have been motivating for these males. The effect of making attributions seems to have had an opposite effect on females - high RAM females' performance following failure was depressed when attributions were requested. This suggests that ego-involving instructions plus making overt causal attributions may have been overmotivating for these females as reflected in the number of errors on the second task.

In sum, the strongest effect that surfaced was that females appeared to be more highly motivated than males as indicated by their superior performance on the second task in terms of total behavioral output and accuracy of responding. The act of making attributions, but not the specific attributions themselves, seemed to have motivating for males but overmotivating for females.

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Table 1

Means and Standard Deviations for Performance and Attribution Measures as a Function of Participant Gender and Attribution[a,b]

		Males		Females	
		Attribution	No Attribution	Attribution	No Attribution
Quantity	X	137.125	136.656	151.188	153.281
	SD	21.584	22.320	22.882	19.728
Quality	X	110.156	102.438	112.656	124.047
	SD	23.751	21.079	22.758	20.879
Effort	X	569.969	XX	498.969	XX
	SD	206.875	XX	174.195	XX
Ability	X	1895.438	XX	1891.156	XX
	SD	187.964	XX	239.449	XX
Luck	X	949.531	XX	1068.062	XX
	SD	247.735	XX	295.788	XX
Task	X	2645.062	XX	2601.812	XX
Diff.	SD	253.938	XX	225.591	XX

[a]The only significant difference in cell means is between the No Attribution-Female cell and all other cells for performance quality, $p < .05$.
[b]XX values indicate no measures taken.

Table 2

Pooled Within Cell Correlations of Performance and Attribution Measures[a]

	Quantity	Quality	Effort	Ability	Luck	Task Difficulty
Quantity	------	0.669	0.064	0.031	-0.113	0.029
Quality	0.798	------	0.030	0.074	-0.268	0.167
Effort	-0.249	-0.087	------	-0.118	-0.054	-0.688
Ability	-0.001	-0.063	0.313	------	-0.581	-0.027
Luck	0.064	0.031	-0.446	-0.698	------	-0.475
Task	0.087	0.083	-0.423	-0.333	-0.281	------

[a]Correlations for males above diagonal, correlations for females below diagonal.

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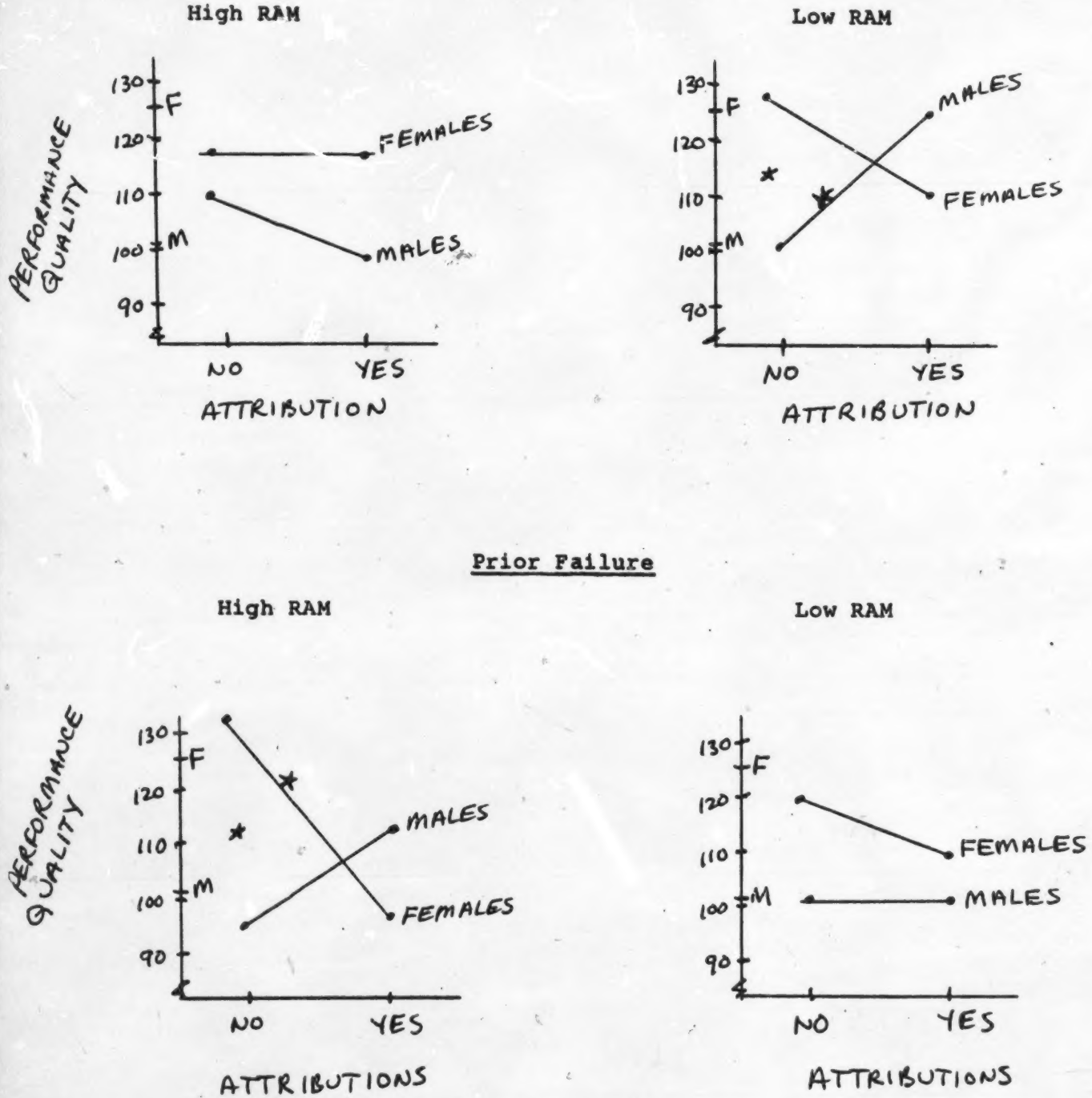
Figure 1

Simple Gender X Attribution Interactions at Different Levels of Achievement Motivation and Prior Success/Failure[a]



Female control group; no prior task
Male control group; no prior task

[a]Asterisks (*) indicate significant differences between means.